

Form INV-2 EMISSION POINT DESCRIPTION

Duplicate this form for EACH Emission POINT

1) Company/Facility Name		Grain Elevator Inc		1a) Form INV-2 Page		of			
2) Emission Point Number		EP-6							
3) Emission Point Description		Rail Loadout Emissions							
4) Is this stack/vent used as an Emergency Bypass Stack?		No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>					
If YES, for which stack(s)? List Emission Point Nos.:									
EMISSION POINT INFORMATION									
5) Emission Point Type									
Stack/Vent		<input type="checkbox"/>							
Fugitive (specify)		<input checked="" type="checkbox"/>							
Other (specify)		<input type="checkbox"/>							
6) Stack Shape and Dimensions: (interior dimensions at exit point)									
Circular Diameter:		<input type="checkbox"/>		inches					
Rectangular Dimensions:		<input type="checkbox"/>		inches X		<input type="checkbox"/> inches			
Other Dimensions		<input type="checkbox"/>		inches					
7) Stack Height Above Ground				feet					
8) Does the Emission Point have a rain cap (or anything else) which obstructs the flow of gases leaving the Emission Point, or a horizontal discharge?									
No		<input type="checkbox"/>		YES (specify):				<input type="checkbox"/>	
9) COMPOSITION OF EXHAUST STREAM									
Exhaust Stream Characteristics		Emission Point Composition of Exhaust Stream			Units of Measure				
a) Flow Rate					<input type="checkbox"/> ACFM <input type="checkbox"/> SCFM				
b) Temperature					Degree Fahrenheit				
10) BYPASS STACKS									
Bypass Stack – Emission Point No.				Bypass Stack Description					
Bypass Stack – Emission Point No.				Bypass Stack Description					
11) LIST OF EMISSION UNITS VENTING THROUGH THIS EMISSION POINT									
Emission Unit No.		Emission Unit No.		Emission Unit No.		Emission Unit No.			
EU-6									

Duplicate this form as needed

TYPE ALL INFORMATION

(DNR Form 542-4004. November 1, 2006)

Form INV-3 EMISSION UNIT DESCRIPTION – POTENTIAL EMISSIONS

Duplicate this form for EACH Emission UNIT

1) Company/Facility Name		Grain Elevator Inc				1a) Form INV-3 Page		of	
2) Emission Point Number		EP-6							
EMISSION UNIT (PROCESS) IDENTIFICATION & DESCRIPTION									
3) Emission Unit Number		EU-6							
4) SCC Number		30200563							
5) Description of Process		Grain Loadout to Railcar							
6) Date of Construction		3-1-57		7) Date of Installation		3-1-57		8) Date of Modification	
9) Raw Material – OR Fuels Used List worst case for EACH pollutant		Corn							
10) Federally Enforceable Limit		50 tons PM ₁₀ /yr for the entire facility							
11) Permit or Rule Establishing Limit		08-A-000							
12) Maximum Hourly Design Rate		1,400			Tons			Per Hour	
13) AIR POLLUTION CONTROL EQUIPMENT (CE)									
Control Equipment Number									
Control Equipment Description									
Control Equipment Number									
Control Equipment Description									
POTENTIAL EMISSIONS									
14 Air Pollutant	15 Emission Factor	16 Emission Factor Units	17 Source of E.F.	18 Ash or Sulfur %	19 Potential Hourly Uncontrolled Emissions (Lbs/Hr)	20 Combined Control Efficiency	21 Transfer Efficiency	22 Potential Hourly Controlled Emissions (Lbs/Hr)	23 Potential Annual Emissions (Tons/Yr)
PM-2.5	.00037	Lbs/ton	AP-42		.52				.09
PM-10	.0022	Lbs/ton	AP-42		3.08				.55
SO ₂									
NOx									
VOC									
CO									
Lead									
Ammonia									
POTENTIAL EMISSIONS - HAPs and additional regulated air pollutants – list the pollutant name in Column 14									

*Sources of Emission Factors: CEM .. Stack Test .. Mass Balance .. AP-42 .. WebFIRE.. TANKS. EPA-L&E .. Worksheet .. Other – Specify

Form INV-4 EMISSION UNIT DESCRIPTION – ACTUAL EMISSIONS

Duplicate this form for EACH Emission UNIT

1) Company/Facility Name	Grain Elevator Inc			1a) Form INV-4 Page		of	
2) Emission Year	20--	3) Emission Point Number	EP-6				
EMISSION UNIT – ACTUAL OPERATIONS AND EMISSIONS							
4) Emission Unit Number	EU-6		5) SCC Number	30200563			
6) Description of Process	Grain Loadout to Railcar						
ACTUAL THROUGHPUT							
7) Raw Material	Corn						
8) Actual Throughput – Yearly Total	150,000	9) Units Raw Material	Tons				
Actual Operating Rate/Schedule							
	10) Percent of Total Operating Time	11) Hours/Day	12) Days/Week	13) Weeks/Quarter			
JAN – MAR	35	8	5	13			
APR – JUN	20	8	5	13			
JUL – SEP	10	4	5	13			
OCT - DEC	35	8	5	13			
14) AIR POLLUTION CONTROL EQUIPMENT (CE)							
Control Equipment Number							
Control Equipment Description							
Control Equipment Number							
Control Equipment Description							
ACTUAL EMISSIONS							
15 Air Pollutant	16 Emission Factor	17 Emission Factor Units	18 Source of E.F.	19 Ash or Sulfur %	20 Combined Control Efficiency	21 Transfer Efficiency	22 Actual Emissions (Tons/Yr)
PM-2.5	.00037	Lbs/ton	AP-42				.03
PM-10	.0022	Lbs/ton	AP-42				.17
SO ₂							
NOX							
VOC							
CO							
Lead							
Ammonia							
ACTUAL EMISSIONS - HAPs and additional regulated air pollutants – list the pollutant name in Column 15							

*Sources of Emission Factors: CEM .. Stack Test .. Mass Balance .. AP-42 .. WebFIRE.. TANKS.. EPA-L&E .. Worksheet .. Other – Specify

Duplicate this form as needed

TYPE ALL INFORMATION

(DNR Form 542-4002 November 1, 2006)

Form INV-5 CALCULATIONS

Duplicate this form for each Form it will accompany in the Questionnaire

1) Company/Facility Name	Grain Elevator Inc			1a) Form INV-5 Page		of	
2) Emission Point No.	EP-6	3)	Emission Unit No.	EU-6			
4) Calculations are provided in support of information reported on Form INV -	3	<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	for the Emission Point and Emission Unit listed above.		
5) Emissions Calculations							

This methodology should be followed for all grain loadout to rail operations at grain elevators:

Maximum hourly design rate of rail loadout = 1,400 tons/hr

PM_{2.5} emission factor for grain loadout to rail per AP-42, Table 9.9.1-1 = .00037 lbs/ton (uncontrolled factor)

PM₁₀ emission factor for grain loadout to rail per AP-42, Table 9.9.1-1 = .0022 lbs/ton (uncontrolled factor)

Potential hourly uncontrolled emissions:

PM_{2.5} = 1,400 tons/hr x .00037 lbs/ton = .52 lbs/hr

PM₁₀ = 1,400 tons/hr x .0022 lbs/ton = 3.08 lbs/hr

Potential annual emissions:

To calculate PM_{2.5} and PM₁₀ potential annual emissions multiply the highest actual grain throughput from the last five years by 1.2. Multiply the adjusted actual throughput by the emission factor and divide by 2,000.

Highest actual throughput in the last five years = 416,667 tons/yr

416,667 tons/yr x 1.2 = 500,000 tons/yr

PM_{2.5} = 500,000 tons/yr x .00037 lbs/ton x 1 ton/2,000 lbs = .09 tons/yr

PM₁₀ = 500,000 tons/yr x .0022 lbs/ton x 1 ton/2,000 lbs = .55 tons/yr

Form INV-5 CALCULATIONS

Duplicate this form for each Form it will accompany in the Questionnaire

1) Company /Facility Name	Grain Elevator Inc			1a) Form INV-5	Page		of	
2) Emission Point No.	EP-6	3)	Emission Unit No.	EU-6				
4) Calculations are provided in support of information reported on Form INV -		3	<input type="checkbox"/>	4	<input checked="" type="checkbox"/>	for the Emission Point and Emission Unit listed above.		
5) Emissions Calculations								

This methodology should be followed for all grain loadout to rail operations at grain elevators:

Actual emissions from all processes at Group 2 Grain Elevators should be calculated using actual throughput data from the applicable emission year.

Actual emissions:

To calculate actual emissions, multiply the actual grain throughput by the appropriate emission factor and divide by 2,000.

$$PM_{2.5} = 150,000 \text{ tons} \times .00037 \text{ lbs/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = .03 \text{ tons}$$

$$PM_{10} = 150,000 \text{ tons} \times .0022 \text{ lbs/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = .17 \text{ tons}$$